PCN85
THE ANALYSIS OF COSTS AND REIMBURSEMENTS FOR LUNG CANCER TREATMENT IN THE CZECH REPUBLIC
Rogalewicz V[1], Simrova J[2], Vojtisek R[3], Bartak M[4]
[1]*Czech Technical University in Prague, Kladno, Czech Republic,* [2]*University Hospital Plzen, Plzen - Lochotin, Czech Republic,* [3]*University Hospital Plzen, Plzen - Lochotin, Czech Republic,* [4]*J.E. Purkyně University, Usti nad Laben, Czech Republic*
OBJECTIVES: Lung cancer is the most frequently diagnosed oncologic disease worldwide, annually diagnosed in nearly 1.4 million patients. In 2010, the incidence in men was 89.7 per hundred thousand people (in 1996, it was 102.3), while in women 35.2 (against 22.9 in 1996). The severity of the disease is also reflected by the high mortality rate, which was 74.8 per hundred thousand people in men and 27.4 in women in 2010. **METHODS:** Identifying the costs spent by a clinic/hospital is difficult in the Czech Republic, as the majority of hospitals work with cost related data in the "confidential" mode. The costs were estimated and verified based on expert opinions of pulmonologists, oncologists, head physicians and staff members of technical and economic departments of five pneumo-oncologic centres and university hospitals in this study. **RESULTS:** Totally 32 procedures (process maps) were identified in lung cancer treatment (10 in diagnostic, 22 in therapeutic processes). Each procedure consists of diagnostics, therapy and subsequent monitoring of patients. Costs for respective steps were assessed, and total costs for each therapeutic scheme were calculated. **CONCLUSIONS:** The calculations imply that treatment costs significantly differ depending on the selected diagnostic/ therapeutic procedure. The setting of the reimbursement system generates different stimuli for providers who may reach both positive and negative balances. This fact may have an effect on economic results leading, in its consequence, to the preference of alternatives more suitable in terms of reimbursement regardless of the optimum procedures for a specific patient.

PCN86
TREATMENT PATTERNS AND COSTS ASSOCIATED WITH CHRONIC LYMPHOCYTIC LEUKEMIA CHEMOTHERAPY UNDER THE BRAZILIAN PRIVATE HEALTH CARE PERSPECTIVE: A RETROSPECTIVE ANALYSIS OF THE ORIZON DATABASE
Ferreira CN[1], Paloni EDMP[1], Asano E[2], Santana CFSD[1], Pereira ML[2]
[1]*ORIZON - Companhia Brasileira de Gestão de Serviços, Sao Paulo, Brazil,* [2]*Janssen-Cilag Farmaceutica, Sao Paulo, Brazil*
OBJECTIVES: To identify the chemotherapeutic treatment patterns and associated costs in patients with chronic lymphocytic leukemia (CLL) in the Private Healthcare System. **METHODS:** A retrospective analysis of the Orizon database, containing inpatient and outpatient claims data of a pool of 102 HMOs (34% of the total Private Health System), from January 2009 to December 2012 was conducted. Eligibility criteria were patients starting CLL (ICD-10 code C911) chemotherapy treatment from April 2009 to December 2012. This cohort of patients was followed until December 2012, death or loss of follow-up. Chemotherapy regimens were identified based on the agents reported in the claims. Line of treatment was defined based on meaningful interruption (>6 months) and/or change in the chemotherapy regimen. Descriptive statistics (average, standard deviation and percentage) of treatment regimens, duration of treatment and costs were performed. **RESULTS:** A total of 163 patients representing 859 cycles of chemotherapy met eligibility criteria; 43.6% of the patients underwent more than one line of treatment, with total chemotherapy costs of R$84,979.63 per patient. The three most widely used chemotherapy regimen were: fludarabine, cyclofosfamide and rituximab (FCR), used in 81 (54.9%) patients with average treatment duration of 3.54 cycles and total costs of R$69,241.91 per patient; rituximab monotherapy, used in 44 (27.0%) patients, with average treatment duration of 4.05 cycles and total costs of R$59,543.12 per patient; and fludarabine and cyclofosfamide (FC), used in 19 (11.7%) patients, with average duration of 2.22 cycles and total costs of R$7,075.95 per patient. Chemotherapy drugs accounted for 72.8% of the total costs, followed by other medicines (11%), disposable devices (5.5%) and hospital facility fees (5.0%). **CONCLUSIONS:** FCR is the standard of care in CLL patients treated in the Brazilian Private Health System, and almost half of the patients undergo more than one treatment line, creating a significant financial burden to private payers.

PCN87
COST OF CANCER IN THE AUSTRIAN HOSPITAL SETTING
Walter E[1], Said M[1], Bauer M[1], Gastl G[2], Samonigg H[3]
[1]*Institute for Pharmaeconomic Research, Vienna, Austria,* [2]*Medical University of Innsbruck, Innsbruck, Austria,* [3]*Medical University of Graz, Graz, Austria*
OBJECTIVES: In Austria, 38,000 people are yearly diagnosed with cancer, which is the world's leading cause of death (Austria: 19,547), followed by heart disease and stroke. Advances in early detection, prevention and treatment have led to decreasing cancer death and more favorable outcomes. Moreover, significant increases in the cost of cancer care have come in parallel with these advances. The cost factor related to modern cancer treatment is increasingly a matter of debate. Hence, the aim of the analysis was to evaluate the cost of cancer expressed as reimbursed lump-sums of the DRG system, number of inpatients stays and Length-of-Stay (LOS) in the inpatient setting to bring more transparency in the discussion and bridge the information-gap. **METHODS:** We performed a retrospective claim-based analysis with Austrian DRG-System (LKF Leistungsorientierte Krankenanstaltenfinanzierung) data. The DRG-System is based on ICD-10 codes. Payment consists of one or several case-based lump-sums. Our analysis included all cancer hospital admissions. The cost-evaluation is based on the refunded lump-sums of the DRG-System for the year 2011. **RESULTS:** In 2011, 353,883 inpatient stays with a diagnosis of cancer were monitored. Hospital stays due to cancer accounts for 14% of the entire inpatient stays in Austria. The average LOS in cancer patients was 4.35 days and was associated with average costs per stay of 3,730 Euros. Compared with the total number of admissions these numbers are below average (LOS: 5.43; costs per stay: 3,949 Euros). Furthermore, cancer patients received medical services to the value of 927 million Euro or 14.2% of total reimbursed lump-sums (6.53 billion Euros) in Austria. 224 million Euros fall upon medical tumour therapy. With regard to monoclonal antibody therapies, 56 million Euros was refunded. **CONCLUSIONS:** The current development in modern cancer therapies leads to efficient treatment pathways expressed in higher survival rates, reduced hospital days and an improved quality-of-life.

PCN88
COST-ANALYSIS IN THE TREATMENT OF PATIENTS AFFECTED BY MALIGNANT ASCITES IN ITALY
Teruzzi C[1], Mantuano M[1], Colombo GL[2], Bruno GM[3], Di Matteo S[3]
[1]*Temas. A Quintiles Company, Milan, Italy,* [2]*University of Pavia, Pavia, Italy,* [3]*S.A.V.E. Studi Analisi e Valutazioni economiche, Milan, Italy*
OBJECTIVES: The objective of this project was to identify the treatment cost of malignant ascites from the Italian NHS perspective through a cost-analysis. Three reference centers in Italy contributed to this study during year 2012. **METHODS:** Three centers (Scientific Institute of Romagna for Cancer Studies and Treatment-I.R.S.T; Medical Oncology Unit of San Gerardo Hospital; Department of Gynecology of University Hospital Agostino Gemelli) were chosen due to the fact that they treat a representative sample of patients with malignant ascites in Italy. Each center was asked to complete three case report forms: the first identifying the costs for the pre-procedure diagnostic tests, the second identifying the specific procedure costs (paracentesis) and the third identifying the specific costs due to treatment of complications. All these reports had to be completed for the last 5 patients diagnosed with malignant ascites in order to prevent selection bias. A total cost for each patient was calculated by DRG analysis (standard cost – tariff). The DRG analysis assessed: day hospital, admission number, hospitalization, number of hospitalization days, principal diagnosis, main procedure/intervention, number of paracentesis procedures performed on the same patient with the same diagnosis, DRG type, DRG code, refund value for day hospital/ refund value for ordinary hospitalization. **RESULTS:** The analysis shows an average cost of € 1,464.42 per patient with malignant ascites using the DRG reimbursement rate (minimum value: €1,405.63; maximum value: €1,525.37). Analysis using DRG with complications resulted in a mean value of €1,524.84 (minimum value: €1,429.69; maximum value: €1,625.55). The key cost driver of malignant ascites treatment was the paracentesis procedure. **CONCLUSIONS:** The economic impact of paracenteses is high, especially when procedures must be repeated. The reduction in the number of paracenteses could reduce the costs while improving the QoL of the patients.

PCN89
ECONOMIC EVALUATION OF AN ELECTRICAL IMPEDANCE SPECTROSCOPY (EIS) DEVICE USED AS AN ADJUNCT TO COLPOSCOPY
Bessey A, Whyte S, Minton J, Chilcott J
University of Sheffield, Sheffield, UK
OBJECTIVES: Colposcopy is an essential part of the screening process for the prevention of cervical cancer by diagnosing and treating precancerous lesions known as cervical intra-epithelial neoplasia (CIN). The objective of this study was to assess the cost and health impact of using an electrical impedance spectroscopy (EIS) device to aid in the diagnosis of precancerous lesions compared to standard colposcopy. A threshold for the EIS device that resulted in a similar sensitivity and higher specificity than standard colposcopy was used. **METHODS:** Two models to assess the cost and health impacts were developed; a short term model representing the initial colposcopy treatment pathway and a longer term Markov model that included colposcopy follow-up. Sensitivity and specificity of colposcopy were derived from the EpiCIN trial of the EIS device. Two referral thresholds were defined in the analysis, the threshold for 'See and Treat' on colposcopic impression alone (CI) and a lower threshold for referral for biopsy to determine disease presence (DP) prior to treatment. Costs of colposcopy were estimated using data from Sheffield Teaching Hospitals. Different colposcopy clinic scenarios were modelled to represent the different ways colposcopy clinics manage patients. Health related quality of life (HRQoL) decrements were applied for colposcopy, biopsy and treatment. One-way sensitivity analyses were also conducted. **RESULTS:** The analysis suggests that the use of the EIS device can result in fewer biopsies being taken, a reduction in over-treatment with an associated small improvement in HRQoL, and a lower colposcopy cost per woman with CIN2+ treated for some colposcopy clinic scenarios. The results are sensitive to changes in colposcopy costs. **CONCLUSIONS:** The use of the EIS device with a higher specificity and similar sensitivity to standard colposcopy has the potential to lead to a reduction in the colposcopy cost per woman with CIN2+ treated for some clinic scenarios.

PCN90
ESTIMATION OF THE EPIDEMIOLOGICAL AND ECONOMIC IMPACT OF THE QUADRIVALENT HPV VACCINATION IN GIRLS AND BOYS IN SPAIN
Bosch X[1], Cortés Bordoy J[2], Gil de Miguel A[3], López Belmonte JL[4], Bresse X[5], Serip S[6], Nieves D[6]
[1]*Catalan Institute of Oncology, Barcelona, Spain,* [2]*Gynaecological Oncology Centre, Palma de Mallorca, Spain,* [3]*Universidad Rey Juan Carlos, Alcorcon, Spain,* [4]*Sanofi Pasteur MSD, Madrid, Spain,* [5]*Sanofi Pasteur MSD, Lyon, France,* [6]*Oblikue Consulting, Barcelona, Spain*
OBJECTIVES: To estimate the epidemiological and economic benefits of a quadrivalent HPV vaccination in girls and boys compared with vaccination only in girls in Spain. **METHODS:** A population-based compartmental dynamic transmission model of HPV developed in the US was partially adapted to the Spanish setting updating epidemiological data of HPV related diseases, the vaccination coverage and direct costs of the diseases. The analysis was performed from the National Health System (NHS) perspective. The strategy of cervix cancer screening (CCS) and vaccination of only girls from 11 to 26 years (S1) was compared to CCS and vaccination of girls and boys from 11 to 26 years (S2) with the quadrivalent vaccine. Assuming the duration of protection against vaccine HPV types is lifetime, the results over a 100-year time horizon, were estimated applying a discount of 3% on costs. In order

to assess the uncertainty on the parameters, univariate sensitivity analyses were performed. **RESULTS:** At 100 years, compared to only screening for cervix cancer, S2 scenario reduced 73% of the genital warts cases, 92% of the cancer cases in women and 87% of the cancer cases in men; while S1 strategy only reduced 56%, 87% and 63% the cases of the different diseases, respectively. S2 strategy was less costly compared with S1: during the first 10 years reduced more than €25 million for the NHS and more than €282 million over 100 years. The savings over 100 years varied between €141 million and €1,268 million when considering a 5% or 0% discount, respectively. **CONCLUSIONS:** Vaccinating boys and girls between 11 and 26 years would significantly reduce the epidemiological and economic burden of HPV related diseases in Spain.

PCN91

COMPARATIVE COST-CONSEQUENCE ANALYSIS OF THE BIVALENT AND QUADRIVALENT VACCINES AGAINST HPV IN SPAIN

López Belmonte JL[1], Cortés Bordoy J[2], Gil de Miguel A[3], Bresse X[4], Serip S[5], Nieves D[5], Bosch X[6]

[1]*Sanofi Pasteur MSD, Madrid, Spain,* [2]*Gynaecological Oncology Centre, Palma de Mallorca, Spain,* [3]*Universidad Rey Juan Carlos, Alcorcon, Spain,* [4]*Sanofi Pasteur MSD, Lyon, France,* [5]*Oblikue Consulting, Barcelona, Spain,* [6]*Catalan Institute of Oncology, Barcelona, Spain*

OBJECTIVES: To compare the impact of the quadrivalent (QV) (HPV 6/11/16/18) and bivalent (BV) (HPV 16/18) vaccines against HPV in Spain. **METHODS:** A population-based compartmental dynamic transmission model of HPV developed in the US was partially adapted to Spain updating epidemiological data of HPV related diseases, the vaccination coverage and direct costs of the diseases. The reduction of the number of cases related to HPV and savings associated with the following strategies were compared: A) cervix cancer screening (CCS) of women between 25-65 years, every 3-5 years and a vaccination program of girls between 11-26 years with the QV vaccine; B) CCS+BV vaccine. The analysis was performed from the National Health System (NHS) perspective, costs were discounted by 3% and the time horizon was 100 years. Univariate sensitivity analyses were performed to assess the uncertainty on the parameters. **RESULTS:** At 100 years, considering the current indications of the vaccines, lifetime protection against HPV vaccine types and 20 years of cross-protection, both strategies reduced 208 cases of vulvar and vaginal cancers and 22,796 cases of CIN2+. The strategy CCS+QV vaccine reduced 18,689 additional cases of genital warts due to the protection against 6/11 HPV types, but 4 less cases of cervix cancer and 359 less cases of CIN2+ due to better cross-protection of the BV vaccine. Nevertheless, savings accumulated during 100 years due to the reduction of genital warts cases (€215.7 million) compensated the cost associated to cervix cancers and CIN2+ that the BV vaccine additionally reduced (€3 and €27.1 million, respectively). Therefore, during 100 years the QV vaccine saves €185.4 million more than the BV vaccine. The sensitivity analyses confirmed the stability of the results. **CONCLUSIONS:** The QV vaccine provides higher cost savings to the NHS compared to the BV vaccine due to the additional efficacy against HPV 6/11 types.

PCN92

ONE LINE DOES NOT MAKE A PICTURE: REAL-WORLD COST-EFFECTIVENESS OF MULTIPLE MYELOMA TREATMENTS USING A FULL DISEASE MODEL

Blommestein H[1], Verelst S[2], de Groot S[1], Huijgens P[3], Sonneveld P[4], Uyl-de Groot C[1]

[1]*Erasmus University, Rotterdam, The Netherlands,* [2]*Erasmus MC, Rotterdam, The Netherlands,* [3]*VU University Medical Center, Amsterdam, The Netherlands,* [4]*Erasmus University Medical Center, Rotterdam, The Netherlands*

OBJECTIVES: As with many types of cancer, treatment of multiple myeloma (MM) is characterised by sequential treatment lines consisting of innovative expensive drugs such as thalidomide, bortezomib and lenalidomide. While cost-effectiveness of single treatments has been studied, a full disease model evaluating treatments sequentially is currently lacking, consequently, high uncertainty exists on incremental cost-effectiveness ratios. Therefore, we aimed to take a look at the big picture and calculate real-world costs and effects for commonly used treatment pathways for MM. **METHODS:** We developed a patient-level simulation (PLS) for elderly (>65) MM patients diagnosed since 2004. Real-world data (N=621) including patient and disease characteristics, treatment information as well as resource use was collected from hospital registrations and medical files. Five treatment categories per line were observed resulting in 19 commonly used treatment pathways. Parametric survival models including patient characteristics such as age, performance status, comorbidities and laboratory values were used to predict time to an event, i.e. the start of a new treatment or death. Logistic regression determined which of the two competing events occurred. The sensitivity of parameters was explored through sensitivity analyses. **RESULTS:** In total, the costs and effects of 19 treatment pathways were calculated. Depending on the treatment sequencing, total costs ranged from €40,810 (Melphalan/Prednison-Thalidomide-Other) to €132,613 (Bortezomib-Lenalidomde-Other) while overall survival ranged from 28 to 50 months for Bortezomib-Lenalidomide-Thalidomide and Lenalidomide-Bortezomib-Other, respectively. Costs per quality-adjusted-life-year (QALY) were between €21,881 (Melphalan/Prednison-Thalidomide-Other) and €57,743 (Bortezomib-Lenalidomide-Other). Compared to real-world prescription, QALYs could be increased at a cost of €33,785 per QALY (Lenalidomide-Thalidomide-Other). **CONCLUSIONS:** The cost-effectiveness of 19 treatment pathways for MM patients was calculated and revealed that real-world treatment could be improved at a cost of €33,785 per QALY. Our PLS model proved to be a reliable and robust approach to study entire treatment pathways for MM.

PCN93

COMPARATIVE EFFECTIVENESS OF CONSERVATIVE THERAPY VERSUS CYSTECTOMY FOR NON-MUSCLE INVASIVE BLADDER CANCER PATIENTS

Dinh T

Archimedes Inc., San Francisco, CA, USA

OBJECTIVES: Non-muscle invasive bladder cancer (NMIBC) is a complex disease with wide variation in risks of recurrence and progression, treatment efficacy and complications, and patient co-morbidities. To assist in medical decision making from clinical and cost perspectives, we have developed a simulation model that synthesizes the evidence on NMIBC using the Archimedes Model platform. **METHODS:** The NMIBC model consists of a patient generation component in which virtual patients are constructed from SEER case listings; a natural history component that captures recurrence, progression, and bladder cancer mortality; a health care component that captures the effects of treatments, tests, and surveillance; and a cost component that tracks the costs relevant to bladder cancer care. Using this model, we performed a 5-year virtual clinical trial of 350 NMIBC patients with demonstrated Bacillus Calmette-Guerin failure, randomized to either immediate cystectomy or conservative treatment with Mitomycin C (MMC) intravesical therapy. The model is integrated within the Archimedes Model platform, which captures the effects of both NMIBC and patient co-morbidities. This model, validated against 5 published studies, gives recurrence and progression rates within ±20% of published results. **RESULTS:** The virtual clinical trial shows a 5-yr cystectomy rate of 51% in the MMC arm, with an average delay to cystectomy of 0.84 yr (median 0.44 yr). The immediate cystectomy arm saves 0.26 life years (LY) and $5598 in total bladder cancer cost per patient compared to the MMC arm. **CONCLUSIONS:** We have constructed a dynamic, quantitative model of NMIBC that can predict clinical and economic outcomes and help optimize treatment and surveillance guidelines. The virtual clinical trial quantifies LY and cost outcomes for immediate cystectomy versus conservative therapy, and provides a valuable tool for trial design and health economic analyses.

PCN94

THE COST-EFFECTIVENESS OF BENDAMUSTINE-RITUXIMAB VERSUS FLUDARABINE-RITUXIMAB FOR PATIENTS WITH INDOLENT NON-HODGKIN'S LYMPHOMA (INHL) WHO HAVE PROGRESSED FOLLOWING TREATMENT WITH RITUXIMAB OR A RITUXIMAB-CONTAINING REGIMEN IN COLOMBIA

Bertwistle D[1], Munakata J[2], Wehler E[3], Leyva V[4], Ariza JG[5], Zambrano C[5], Gonzalez L[6]

[1]*IMS Health, London, UK,* [2]*IMS Health, San Francisco, CA, USA,* [3]*IMS Health, Alexandria, VA, USA,* [4]*IMS Health, Mexico City, Mexico,* [5]*Janssen Cilag, Bogotá, Colombia,* [6]*Janssen, Raritan, NJ, USA*

OBJECTIVES: To determine the cost-effectiveness of bendamustine-rituximab (Ben-R) versus fludarabine-rituximab (Fdb-R) in patients with iNHL who have progressed following treatment with rituximab or a rituximab-containing regimen in Colombia. **METHODS:** An economic model was constructed from the Colombian health system perspective, with a 35-year (lifetime) horizon and a discount rate of 3%. The model included three health states, progression-free (PF), progressive disease (PD), and death, which were associated with utility weights of 0.81, 0.62 and 0, respectively. Clinical inputs (response rates, Kaplan-Meier curves, hazard ratios (HRs) and adverse event rates) were from the Stil NHL 2-2003 study. Resource use data were from interviews with three Colombian hematologists treating iNHL patients. Unit costs were from ISS and SISPRO report and were expressed as 2013 Colombian Pesos. Univariate and probabilistic sensitivity analyses were conducted to determine the key drivers of cost-effectiveness, and uncertainty around the results, respectively. **RESULTS:** Total lifetime cost of Ben-R was $291,192,912 and total cost of Fdb-R was $260,463,392. Ben-R patients accrued more LYs (6.47 vs. 5.15), QALYs (4.66 vs. 3.56), and PFLYs (3.57 vs. 2.05) compared to Fdb-R patients. The ICERs were $23,286,360 (cost per LY), $27,956,124 (cost per QALY) and $20,259,063 (cost per PF LY). Univariate sensitivity analysis revealed that the ICER per LY was most sensitive to the PFS and OS HRs for Ben-R vs Fdb-R, the number of treatment cycles, and the cost of bendamustine. Probabilistic sensitivity analysis with 1,000 iterations estimated that Ben-R had a 52% chance of being cost-effective, compared to Fdb-R, at a willingness to pay (WTP) of $59M per LY, rising to a plateau of about 93% at a WTP of $175M and above. **CONCLUSIONS:** At a willingness-to-pay of $59M (three times the GDP per capita of Colombia) Ben-R is a cost-effective alternative to Fdb-R.

PCN95

COST-EFFECTIVENESS OF THE OPTICAL IMAGING AGENT HEXAMINOLEVULINATE FOR PATIENTS WITH NON-MUSCLE INVASIVE BLADDER CANCER

Marteau F[1], Kornowski A[1], Bennison C[2], Tempest MJ[2], Mariappan P[3], Witjes JA[4]

[1]*Ipsen Pharma SAS, Boulogne-Billancourt, France,* [2]*Pharmerit Ltd., York, UK,* [3]*Western General Hospital, Edinburgh, UK,* [4]*Radboud University Medical Centre, Nijmegen, The Netherlands*

OBJECTIVES: Hexaminolevulinate (HAL) is an optical imaging agent used as an adjunct to white light cystoscopy (WLC) in the diagnosis and management of non-muscle invasive bladder cancer (NMIBC). The objective of this study was to model the cost-effectiveness of HAL-assisted blue light cystoscopy (HAL-BLC) compared to WLC alone when used at initial transurethral resection of bladder tumours (TURB) from the perspective of the National Health Service (NHS) in England and Wales using available clinical data. **METHODS:** A two-part model was developed to estimate the incremental cost-effectiveness of HAL-BLC at initial TURB for patients positively diagnosed in the outpatient setting with NMIBC over a lifetime horizon. This consisted of a short-term decision tree, which estimated the outcome of the outpatient diagnostic procedure and inpatient TURB, and a Markov cohort model, used to extrapolate long term outcomes. Clinical effectiveness evidence on recurrence was taken from a recent meta-analysis of NMIBC with HAL-BLC, costs were derived from NHS reference costs, and utilities and disease evolution were from the literature. **RESULTS:** Despite additional treatment and equipment costs, base case results suggest that HAL-BLC is a dominant strategy as an adjunct to WLC compared to WLC only, when used at initial TURB for patients diagnosed with NMIBC. HAL-BLC is expected to be associated with 0.060 incremental QALYs and cost-savings of £391 per patient resulting from fewer recurrences and fewer associated surgical procedures (33 avoided TURBs/149 positively-diagnosed patients), in turn due to improved completeness of lesion resection and better tumour staging. Probabilistic sensitivity analyses indicated that HAL-BLC was dominant in 91.9% of iterations. **CONCLUSIONS:** HAL-BLC as an adjunct to WLC was shown to be a domi-